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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/823,052

04/13/2004

Nir Corse

CM05224EI

4087

22917

7590

11/25/2005

MOTOROLA, INC.
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EXAMINER

GOODLEY, JAMES E

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/823,052

Applicant(s)

CORSE ET AL.

Examiner

James E. Goodley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1 and 12 (as amended) include the limitation that the resonator feedback network is, "coupled in parallel to the first variable capacitance". However, neither the applicants' specification nor the drawings show how this limitation can be met by the invention. The applicants state in paragraph 52 of the specification that the feedback network of the Colpitts oscillator is the feedback path between emitter 460 and base 465 of transistor 450. It is also stated in paragraphs 55 and 56 that the resonator which, determines oscillation frequency, is resonator 475. It is not clear how resonator 475 is part of the feedback circuit. It is also not clear how resonator 475 may be considered to be, "coupled in parallel to the first variable capacitance." There is an unlabeled capacitor connected directly between first variable capacitance 425 and resonator 475. The specification does not refer to this capacitor and how it may be considered to

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couple elements 425 and 475 in parallel. Therefore, this limitation is addition of new matter and cannot be treated on the merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by

Chong (US 6,075,421).

Regarding **claims 1, 2 and 12**, Fig. 1, lines 48-67 of column 2 and lines 1-40 of column 3 of Chong shows a wireless communication terminal comprising a voltage controlled oscillator comprising:

a transistor [Tr1] for producing power gain;

a first variable capacitance [VR1] operably coupled to the base of the transistor (via capacitors C2 and C4), providing a variable capacitance value based on a voltage applied on a steering line [V_{ctrl}]; and

a feedback network [path 5 from collector of Tr1 through Cf and Lf back to base of Tr1] comprising a resonator [2] operably coupled to an output of the transistor, for feeding power back to an input of the transistor to sustain oscillations;

and wherein the voltage controlled oscillator further includes a second variable capacitance [VR2] operably coupled to receive a control voltage [V_{ctrl}] from the steering

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line via a common isolator inductor [L1] as the first variable capacitance and is located between the resonator and the transistor.

Regarding **claim 3**, Fig. 1 of Chong shows the wireless communication terminal according to claim 2, wherein the transistor has a base electrode [B] and the second variable capacitance is connected between the resonator and the base electrode of the transistor.

Regarding **claim 4**, lines 1-19 of column 4 of Chong teaches the wireless communication terminal according to claim 1, wherein an increase in the loaded-Q value (predominantly capacitive impedance) of the voltage controlled oscillator over the desired bandwidth of operation when a high tuning voltage is applied to the second variable capacitance.

Regarding **claim 5**, Fig. 1 of Chong shows the device of claim 1, except wherein the second variable capacitance is operably configured such that, when a low tuning voltage is applied, a gain margin of the voltage controlled oscillator is increased to a level sufficient to provide oscillations. However, it is inherent that lowering the input voltage to an electrical system will always increase the gain margin of that system.

Regarding **claim 9**, Fig. 1 of Chong shows the wireless communication terminal according to claim 1, wherein the voltage controlled oscillator comprises a Colpitts configured voltage controlled oscillator (due of collector to ground capacitances of C_f and C₆, base to ground capacitance C₃ and base to ground inductor L₃).

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chong in view of DaSilva (US 4939481).

Regarding **claim 6**, Chong shows the device of claim 1, except "wherein the second variable capacitance provides a capacitance in a range of about 12 pF to about 3pF". However, lines 47-50 of column 2 of DaSilva teach a voltage controlled oscillator utilizing a varactor having a capacitance of 6pF.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Chong by DaSilva to include using a variable capacitance capable of reaching a value of 6pF, for the purpose of allowing a broader range of possible oscillating frequencies.

Regarding **claim 7**, Chong shows the device of claim 1, except "wherein the operation there is applied alternatively to the steering line a low tuning voltage in a range of about 0V to about 2.5V and a high tuning voltage in a range of about 2.5V to about 4.5 V". However, lines 61-64 of column 7 of DaSilva teaches an LC resonant circuit with a tuning voltage varying from 3 volts to 25 volts - thus covering the range of the low and high tuning voltages claimed in the application.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Chong by DaSilva to include a tuning

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voltage ranging from about 2.5V to about 4.5V for the purpose of extending the range of possible oscillating frequencies.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chong in view of *Kitamura et al. (US 6,906,596)*.

Regarding **claim 8**, Chong shows in Fig. 1 the device of claim 1, further comprising an inductor [L1] located on the steering line between the second variable capacitance, except “and a digital-to-analogue converter, such that an independent voltage can be applied from the digital-to-analogue converter to the second variable capacitance”.

However, Fig. 10 and the abstract of Kitamura show a digital-to-analogue converter [273] applied to 2 variable capacitances [C11 and C12] for the purpose of digitally controlling the frequency of oscillator 250.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to alter the device of Chong by the device of Kitamura by including the DAC control to the variable capacitances of Chong for the purpose of obtaining finer control of tuning voltage and an easier implementation of tuning said variable capacitances.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chong in view of Grube et al (US 5987331) in further view of Eban (US 6218909).

Regarding **claim 10**, Chong shows the device of claim 1, except “wherein the wireless communication terminal is operable according to operational standards selected from TETRA and GSM standards and is capable of generating radio frequency

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signals across two distinct operational frequency bands”. However, Grube teaches in lines 18-21 of column 3 a wireless communication terminal that is operable according GSM standards. Furthermore, Eban teaches in lines 59-64 of column 1 a voltage controlled oscillator capable of generating radio frequency signals across two distinct operational frequency bands.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Chong by the teachings of Grube and Eban to include a multiple frequency band voltage controlled oscillator, wherein the wireless communication terminal is operable according to GSM standards for the purpose of maintaining a reasonable tuning/modulation factor within each of the frequency bands and for having the flexibility to be used in GSM subscriber territory.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chong in view of Grube et al (US 5987331).

Regarding **claim 11**, Chong shows the device of claim 1, except “wherein the wireless communication terminal comprises a device selected from a portable radio, a mobile radio, mobile telephone, a personal digital assistant, and a wireless capable laptop computer”. However, lines 18-21 of column 3 of Grube teaches a mobile telephone being used as a wireless communication terminal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Chong by the teachings of Grube by using Chong's VCO in a mobile telephone for the purpose of achieving better vocal clarity over mobile telephone connections.

Response to Arguments

Applicant's arguments filed 11/4/2005 have been fully considered but they are not persuasive.

Paragraph 3 of the applicants' remarks states that claims 1 and 12 have been amended to include the limitation that the resonator feedback network is, "coupled in parallel to the first variable capacitance". However, neither the applicants' specification nor the drawings show how this limitation can be met. Therefore, this limitation is considered addition of new matter to the application and cannot be further treated on the merits.

As necessitated by amendment, the new limitations of claims 1 and 12 requiring that the second variable capacitance is operatively coupled to receive a control voltage from the steering line, "*via a common isolator inductor* as the first variable capacitance" requires new grounds for rejection of the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James E. Goodley whose telephone number is 571-272-8598. The examiner can normally be reached on Monday-Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JG

~~Zandra V. Smith~~
~~Primary Examiner~~



Robert Pascal
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Technology Center 2800